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The effects of pregnancy outcomes on marital satisfaction

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THE EFFECTS OF PREGNANCY OUTCOMES ON MARITAL SATISFACTION

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We, the undersigned faculty, do certify that this thesis is fully adequate in scope and quality as a thesis for the Degree of Master of Arts in Sociology / Anthropology at Lehigh University.

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Abstract

This study, based on the Perinatal Loss Project, examines the marital satisfaction of couples who experienced a pregnancy loss (abortion, ectopic pregnancy, fetal, and neonatal death) with couples who experienced a successful pregnancy and birth. Data were gathered for the loss sample at 6-8 weeks post-loss (N=134 females and 55 males), 14-18 months post-loss (N=112 females and 35 males), and 25-29 months post-loss (N=99 females and 37 males). Data from the pregnancy sample were obtained during pregnancy (N=200 females and 101 males) and 25-29 months following the expected due date (N=99 females and 55 males). The sample included different social classes, and was obtained from private OB-GYN practices and hospital clinics throughout the Lehigh Valley, Pennsylvania area. Using a longitudinal design, it was possible to examine factors that affected marital satisfaction over the course of the study. Factors that were found to affect marital satisfaction negatively were higher grief, higher mental distress, lower social support, subsequent fertility history (pregnancy and loss), unplanned pregnancy, younger age, and less time in a relationship. Although no significant differences were found between the samples on marital satisfaction at the first or third interviews, within group differences existed on marital satisfaction dependent upon the factors mentioned above. Divorce/separation incidence was higher for the loss sample with 7.84% of the relationships ending, as compared to 3.67% of the pregnancy sample.

The Effects of Pregnancy Outcomes on Marital Satisfaction

Introduction

Marital strain as a result of pregnancy loss is one of the most discussed and least studied aspects of parental bereavement. Seemingly ideal relationships become stressed, and incompatible feelings and resentment may follow (Davis, 1975; Mandell, McAnulty, & Reese, 1980; Miles, 1984; Peppers & Knapp, 1980). The resultant effects of pregnancy loss on marriage are paradoxical. The problems that the pregnancy loss present to the marriage may lead to eventual dissolution, or conversely marriages in disarray can become restabilized (Callahan, Brasted, & Granados, 1983; Klass, 1988; Peppers & Knapp, 1980). This polarization effect on marriage has been reported by Lehman, Lang, Wortman, and Sorenson (1989) after the death of a child from leukemia. There are also reports of good marriages getting better. If the experience of the loss can be seen on a continuum over time or from good to bad, many intermediate points exist. After a pregnancy loss, a period of destabilization occurs in the marriage, then many couples report a new sense of stability along with lower levels of marital strain than previously experienced (Gilbert, in press).

Pregnancy loss, whether through spontaneous abortion, ectopic pregnancy, stillbirth or neonatal death, has a profound impact on the family as a whole and the parents as individuals. In comparison to the approximate 3.7 million births in the

United States each year, about 900,000 families are affected by pregnancy loss (Borg & Lasker, 1989; Ventura, Taffel, & Mosher, 1988). Relationships are altered by the loss, and regardless of the stage of pregnancy or cause of death, part of the self is lost along with the dream child (Borg & Lasker, 1989). Bereavement is a crisis state, and the intensity of feelings, which may be of a conflicting nature, have the ability to threaten the stability of the marital relationship. Klass (1988) feels that his work with parents who have lost children of varying ages closely parallels Peppers & Knapp's (1980) study of perinatal death with regard to the description of parental grief. He further states that there are few bereaved parents who do not consider a separation or divorce in the early months after the loss, but as restabilization begins, these thoughts dissipate.

There are a wide variety of reactions to a crisis, and the manner in which a couple deals with the loss can have lasting repercussions on their marriage. Although the loss is a shared experience, grief is an individual one. There are many reasons for marital disharmony during the loss crisis. Three particular reasons are more salient than the others: incongruent bonding, incongruent grieving, and male and female sex role differences, all of which lead to communication breakdown. (See Figure 1 for Peppers and Knapp's (1980) model of the factors contributing to marital disharmony). Incongruent bonding and grieving in tandem lead to feelings of resentment and frustration. The differences between male and female perception of the loss and the uniqueness of what each one experiences may also traumatize the relationship. Males and females experience grief differently for many reasons, not the least of which is

society's expectations, and the heavy load of grief that each partner carries makes understanding these differences difficult. Two divergent outcomes as a result of pregnancy loss that can impact on the marriage are either strengthening of the marital bond or dissolution through separation or divorce. However, it is believed that the majority of couples fall somewhere in between these two extremes.

Insert Figure 1 about here

The longitudinal study, upon which this paper is based, includes both a sample of women who experienced a pregnancy loss and their partners and a sample of pregnant women and their partners. The first interview with the loss sample was 6-8 weeks post loss (Round 1), the second was 14-18 months post loss (Round 2), and the third and final interview took place 25-29 months after the loss (Round 3). The pregnant comparison sample were interviewed at two time points coinciding with the first and third interviews of the loss group.

The purpose of this study is to determine the effects of pregnancy outcomes on marital satisfaction, and the particular factors that affect satisfaction or dissatisfaction. The results of previous studies on pregnancy outcomes do not present clear patterns. However, many allude to marital disruption and dissolution, while presenting little empirical evidence to support these allegations. This study is an attempt at a clarification of the factors affecting marriages due to pregnancy outcomes by comparing a loss sample and a pregnancy sample.

Strengthening or dissolution of the marital bond

A much greater body of literature exists on the effects of the death of a child on parents and their relationship than on the effects of pregnancy loss on relationships. This section will first discuss the loss of a child, and then report the few studies that relate to pregnancy loss. However, it is worth mentioning that other bereavement literature on the death of a parent concludes that marriage offers no protection because each partner in a marital dyad bonds differently with his/her parents, and therefore the loss is perceived differently (Birtchnell, 1970). This may apply as well to the case of pregnancy loss.

Even marriages classified as stable prior to the loss of a child, evidence some discord due to differential grieving patterns (Klass, 1988). However, it is also mentioned that when grief is resolved and the self restabilized, the marriage can realize new depth. Couples who separated or were divorced after the death of a child did not feel that the death was a primary factor in the marital dissolution. These marriages were troubled before the loss and they ". . . received an overdue burial." (Klass, 1988, p. 43) The disruption caused by this nonnormative event can either strengthen the family bond or lead to its disintegration, and in some cases the marriage may be inadequate for the new self that emerges. Although Rando (1985) reports relatively high divorce rates for couples who lose a child due to the myriad of problems experienced with the loss, no empirical evidence is presented.

In a study of bereaved parents, Lehman et al. (1989) found a significantly higher divorce rate for those who lost a child as compared to those who did not. Of the 39 bereaved couples, 9 separated or divorced as compared to 3 of the 39 matched controls. This study examined the long term effects of bereavement (4-7 years) after the death of a child, aged 1 to 18 years, involved in some way in a motor vehicle accident. The bereaved sample was randomly selected from the records of motor vehicle fatality in Michigan occurring from 1976-1979. The control sample was matched to the bereaved on a case-by-case basis on age, sex, income, education, and number and ages of children. Only 60% of this sample were couples due to the difficulty in locating divorced spouses, death, and refusals.

A significant difference was found between the groups on the Pearlin and Schooler (1978) Partner Role Strain Scale on the marital stress scale. However, the contentment scale yielded no reliable difference, and the Spanier Dyadic Adjustment Scale (1976) on the marital contentment scale also yielded no differences between the groups. The loss group experienced more tension and worry in their present daily life with their spouses. This study may be methodologically stronger than others in the bereavement literature due to the use of a matched control group. However, the length of the retrospection (4 - 7 years) may cloud accurate memory.

In a study of sudden infant death, Mandell, McAnulty, & Reese (1980) found that out of 46 couples, 6 relationships were fragmented, and severe marital dysfunction was reported. In all 6 cases, the deceased child was the first. In 4 of the 6 cases, the parents were under 21. Age may be an another important factor in marital stability in

the case of pregnancy loss as well. Duration of marriage was a negative factor for those who married as teenagers in Rankin & Maneker's (1985) study of a divorcing population with children.

In a study of childhood leukemia, the difference in the perception of the illness between the parents is said to have led to deterioration in the marital relationship. Marital problems were reported to have worsened following the diagnosis. In a postmortem survey of 40 families at three months post loss, 5% were divorced, 18% were separated and 70% reported severe marital dysfunction (Kaplan, Grobstein, & Smith, 1976). Later contact with these 40 families showed an increase in the number of marital dissolutions. Binger, Ablin, Feuerstein, Kushner, Zoger, & Mikkelsen (1969) also mention divorce as one of the outcomes from a childhood leukemia study; however, actual numbers are not given.

In a study of 7 couples, Helmrath & Steinitz (1978) found that the couples rated their marriages as happy and stable before the death of their infant, whether or not the couple had another child. Infants lived for 2 hours to 21 days. When these couples looked to each other for support, they often felt frustrated by their differential grieving patterns. They realized that their marriages were in jeopardy due to communications breakdown. However, as the grief was resolved, stronger relationships were reported. This also appears to be a time that previous unresolved conflicts were resolved. Selection criteria for this study included ages 20 to 35, white, middle class, college educated, a wanted pregnancy, and no serious marital

problems. Due to the small sample size and selection criteria, the results of this study may be difficult to generalize to a broader population.

A high percentage of the couples in Gilbert's (in press) study described their marriages as good prior to the pregnancy loss. After the loss, 26 of the 27 couples reported marital disharmony, and 1/3 of these feared for the continuation of their marriage. However, after this period of difficulty, a new sense of stability was realized, and positive aspects of the marriages were reported.

The respondents in Gilbert's (in press) study were interviewed 1 month to 8 years post loss, and included only couples in intact marriages. This length of time can be seen as a methodological limitation as far as correct recall is concerned. Gilbert discusses using only couples in intact marriages as a selection bias in the study.

Dyregrov & Matthiesen (1987a) report that of the 55 parent pairs who lost an infant, most reported that the death brought them closer together. However, the data for this study were gathered 1 to 4 years after the death, and no breakdown by type of loss is reported (1987b). Dyregrov & Matthiesen (1987a,b) and Gilbert's (in press) studies are the closest to pregnancy loss which include examining marriages.

It appears that there are many commonalities in bereavement studies on the loss of a child and pregnancy loss. However, there may also be important differences. The loss of a child seems to be related to higher incidences of divorce than in control groups who did not lose a child. This may be in part related to greater degrees of affectual bonding the longer a child lives, the stress of living with a terminally ill child, and finally coping with the death.

The literature on marital outcomes in the case of pregnancy loss is incomplete, and although pregnancy loss is reported as an event that stresses and tests relationships, little empirical evidence exists on the divorce/separation rates for this group of people. This may be due to the fact that the majority of relationships remain intact following a pregnancy loss. The literature seems to indicate that marriages that were experiencing problems before the loss may be those that are at risk for dissolution. After an initial difficult period following the loss, marriages may return to their previous pre-loss state. The problems that a loss may bring to a marriage may be seen as on a continuum, ranging from severe to mild, with most couples falling in the middle range. From the small amount of information that is available, it would seem that pregnancy loss is a difficult time, but most couples appear to stay in the marriage and report renewed respect and strength for their marriage.

Incongruent Bonding

One of the most frequently cited reasons for marital discord following a pregnancy loss is incongruent bonding (Alexander, 1988; Peppers & Knapp, 1980; Klaus & Kennell, 1976). Tadmor (1986) believes that fathers are likely to experience less attachment, and this difference in bonding results in differences in grieving, and may reduce the father's ability to support his wife. However, one can also be supportive without experiencing the same exact feelings. Each partner in the dyad is at a different point in the bonding process with his/her infant, which in turns leads to differential grieving patterns. Maternal bonding appears to commence before paternal. Klaus and Kennell (1976) feel that there are 9 steps in the maternal bonding process:

planning the pregnancy, confirming the pregnancy, accepting the pregnancy, fetal movement, accepting the fetus as an individual, the birth, seeing the baby, touching the baby, and giving care.

The attachment process continues throughout the pregnancy, and usually by birth, the fathers' attachment is similar to the mothers' (Peppers & Knapp, 1980, 1988). Although this sequence is experienced by the father, it usually takes longer, and it may become complete during caretaking. For some fathers, fetal movement may begin the bonding process. Fathers' involvement in the birth may facilitate bonding (Mandell et al., 1980), and this helps to eliminate vast differences in grieving styles. However, full bonding may not begin until after the birth. This incongruent bonding is followed by incongruent grieving. Since the relationship that each parent shares with the baby is different, the loss is also perceived differently. Partners may expect their spouses to experience grief in the same fashion, but due to the bonding process and differential grieving patterns, this may not be possible. This disparity causes tension at a time when partners need each other's support (Gilbert, in press). Due to the loss, each partner is carrying a maximum load of stress, and often does not have the energy to be supportive.

Incongruent Grieving/Grieving

Although both partners experience the loss, they cope with it differently. When the partners in the marital dyad have bonded in different degrees to their future child, grieving takes a different form for each. For many reasons, the child has different meaning for each, and each partner has his/her own special expectations and

dreams for the child that are destroyed. They deal with their loss and grief both on a couple level and an individual level. Miles (1984) indicates incongruent grieving as a major stressor to parents experiencing the death of a child. Individual grieving styles are related to personality, sex roles, coping style, previous loss history, bonding, and the meaning and value of parenthood to the individual. There is often a lack of synchronicity between the couple in grieving styles and the grief experience, which may produce dissimilar expectations.

In the case where a child is diagnosed with leukemia, spouses often have divergent reactions. Often one spouse perceives the illness as a catastrophe, while the other denies and clings to optimistic hopes for a cure (Kaplan, Grobstein, & Smith, 1976). These divergent reactions to the illness of a child may make it more difficult for spouses to communicate and support each other.

Women are reported to have higher levels of grief after pregnancy loss then men (Benfield, Leib, & Vollman, 1978; Murray & Callan, 1988; Rollins, 1988; Smith & Borgers, 1988-1989; Wolff, Nielson, & Schiller, 1970). Goldbach, Dunn, Toedter, and Lasker (1991) report that although women are higher in grief levels six to eight weeks after the loss, this difference dissipates by the first year. Klass (1988) reports that marriages previously labelled as stress-free experienced some problems due to differential grieving patterns, and that many couples sought outside help in the form of counseling or self-help groups to get through the difficult period. The end result was a strengthening of the marital bond.

The intensity of the affect dimension of the grieving process has the ability not only to reactivate prior marital conflicts, but also to exacerbate existing tensions which threaten the family system (Benswanger, Baider, Cornely, & Sonis, 1980). Parents who experience perinatal loss find that their grief reactions are not mutual but disjointed, and although their need to share emotions is great, communications become strained. However, after the stressful period, some couples report a stronger marital bond.

Sex Roles

Throughout the parental bereavement literature, gender differences in grieving styles are clearly evident. These grieving styles are in part culturally determined. Females tend to vocalize feelings, while males internalize or intellectualize their grief (Benfield, Leib, & Reuter, 1976: Benfield et al., 1978; Cook, 1983; Dyregrov & Matthiesen, 1987b; Goldbach et al., 1991; Helmrath & Steinitz, 1978; Littlefield & Rushton, 1986; Peppers & Knapp, 1980; Rollins, 1988; Schiff, 1977; Stinson, Lasker, Lohmann, & Toedter, in press; Videka-Sherman & Lieberman, 1985). Males also reported feeling that they had to be strong for their wives (Mandell et al., 1980), and often took a managerial role after the loss.

Males and females are socialized differently in our society. Females are taught to be nurturing and expressive, while males are taught to be self-reliant and inexpressive. These culturally appropriate norms extend not only to parenting, but to the bereavement process as well. As a result of these individual manifestations of grief, the partners may not understand the other's reactions, and marital tension may ensue.

The typical male approach to grief is of a more cognitive and solitary nature, and according to Cook (1988), the males are often caught in two separate, double binds: society's expectations that men should be strong for their wives, and that healthy grieving cannot be accomplished without sharing emotions. Males don't necessarily deny their grief, but they work very hard at managing it. Women may interpret their spouses' reaction to the loss as indifferent, while fathers, as a way of dealing with their grief and their wives' emotional reaction, often engage in activities outside of the home. Binger, Ablin, Feuerstein, Kushner, Zoger, & Mikkelsen (1969) also make this observation. When children died from leukemia, fathers often avoided dealing with the death by not being present, therefore, not dealing with the painful interactions within the family.

Even with women's increased labor force participation, children are still a more important aspect of women's role than men's. Women also respond more intensely to pregnancy loss than men. At 2 months post loss, women were significantly higher on the perinatal grief scale than their husbands (Stinson et al., in press). Over a 2 year period, Rollins (1988) found that women's anger over the loss decreased, while men's increased. It may be difficult to compare the grief that women and men experience, due to cultural differences in grieving styles. Cultural norms may prohibit men from expressing their grief openly. This may have implications not only for males' health, but also for their marriages in the long term.

Cultural expectations also suggest that grief is a private affair, and open expression is frowned upon. Although the expectations for men and women differ,

others find this emotional outpouring uncomfortable to deal with whether it comes from men or women.

Timing of Death in Relation to Grief

Death is usually experienced over the years, beginning with grandparents. However, parents who lose a child are often young, and have little experience with death. Parkes (1965) and Skelskie (1975) found that elderly people demonstrate a less dramatic response to the death of a spouse than do younger people, perhaps due to the fact that the death is more timely. It is suggested that gradual exposure to death throughout the life span may facilitate adaption. Death may not be a frequently encountered event with younger people, and their coping skills may not be adequate. Conversely, Bowlby (1980) feels that a previous loss may render a person more vulnerable than one who has not experienced a previous loss.

Sanders (1979-1980) studied the grief reactions of adults experiencing loss through the death of a child, spouse, or parent, and found that the death of a child elicited the most intense grieving. This intense reaction may be due in part to a timing factor. It is accepted that we will all die when the right age is upon us, but it is not accepted that an unborn child or newborn will die without having lived first. Closeness to the deceased and preventability are two factors that Bugen (1977) identifies as prime predictors in the length and depth of grief. The centrality that a child plays in a mother's life may account for the more severe grief that is experienced by mothers.

The issue of sudden death versus death with warning also has divergent findings. Sanders (1979-1980) found no difference in grief intensity between sudden death or chronic illness leading to death, but Glick, Weiss, & Parkes (1974) found that widows who experienced the anticipated death of their spouses showed fewer symptoms that those who experienced an unanticipated death. In Dyregrov & Matthiesen's (1987b) study on stillbirth, neonatal death, and sudden infant death, no correlation was found between the death being sudden and the experience of recovery. Both Klass (1988) and Miles (1985) found radical differences between bereaved parents and non-bereaved parents, but no difference when the child had died of a chronic disease or from accidental causes. However, in the case of sudden death, if preventability is an issue, the grief experience will be more intense.

Gestational Age in Relation to Grief

There are conflicting findings on the gestational age of the fetus in relation to grief. Cullberg (1971), Goldbach et al. (1991), Kirkley-Best (1981), and Tadmor (1986), all found that the significance of the loss is related to gestational age due to greater the length of time for affectual bonding to take place. Toedter, Lasker, & Alhadeff (1988) found that gestational age was one of the variables that predicted grief, whereas Peppers & Knapp (1980) say that mothers who lose a 5 month old fetus experience the same void as those who lose a newborn. Interviews in Peppers & Knapp's (1980) study were conducted from 6 months to 36 years post loss which may be a weakness inherent in this study. Smith and Borgers (1988-1989) also found no differences in grief with regard to early or late loss. The span of their interviews

ranged from 6 months to 7 years. In a study of newborns that did not survive, Benfield et al. (1978) found that grief was not related to birth weight, duration of life, extent of infant contact, previous perinatal loss, parent age, or distance to the hospital. Many of these studies are characterized by methodological weaknesses in sampling and time frame.

In a study that examined stillbirth, neonatal death, and sudden infant death, Dyregrov & Matthiesen (1987b) found that sudden infant death, which was referred to as the later loss, elicited more distress than stillbirth or neonatal death. The length of time that the child had with the parents was the greatest predictor of higher distress on psychometric measures (anxiety, depression, impact of even, bodily discomfort, and general well-being). This survey was taken 1 to 4 years after the loss and includes 117 respondents (55 couples). It is characterized by many of the same weaknesses as other bereavement studies, there is no comparison group and the length of time for the bereaved parents of 1 to 4 years may yield different types of results. Both length of time since loss and retrospection may confound reported distress.

Social Support

Although resolution of grief depends on a nurturing social milieu, each parent is alone in his/her grief. Frequently the cause of death is indeterminable, and the bereavement crisis may lead partners to blame each other. The heavy load of grief that each carries often renders him/her emotionally spent, and the energy and patience to support his/her partner is not available. If irrational blame is present, this further decimates the couple's ability to support each other.

Family and friends may also place blame for the death on the partners, and therefore, are not just nonsupportive, but destructive. Often those individuals who would be a support team do not know how to deal with the loss, and therefore they ignore it. Helmrath & Steinitz (1978) call this the "conspiracy of silence." It is difficult to gain support from others who are afraid or feel threatened by the loss. The parents may be left alone to grieve without the support that is desperately needed at this time.

Public expressions of grief are usually not acceptable in our society, and the bereaved learn that covering their feelings is more acceptable. Arnold & Gemma (1983) say that as a result of this, couples often go underground with their grief, and they may do so separately. This eliminates a primary source of support that each partner might derive from the other. Another reason that help is not forthcoming is that others don't realize the profound impact that the loss has on the family. This lack of community support adds to the parents' sense of isolation. A fetus or neonate has no identity in a community, and is only real in a sense to the parents. Therefore, the loss is not validated by others, which would be a therapeutic tool in helping with the bereavement process. In order to discover a sense of orientation after a stillbirth, Davidson (1984) says that a nurturing social context is necessary to test out feelings and perceptions. Klass (1988) found that widows received the most constructive support from those experiencing a similar loss, thereby allowing expressions of concern and the opportunity to verbalize the loss. However, throughout the literature,

social support is often listed as less than adequate in the bereavement process with regard to perinatal death.

Mutual partner support is thought to be one of the more important factors in grief resolution (Borg & Lasker, 1989; Laurell-Borulf, 1982; Toedter et al., 1988). Helmrath & Steinitz (1978) say that as couples feel the isolation from friends and family, they turn to each other for support. If the partners are capable of supporting each other, a sense of stability and control is experienced. When 20 families were surveyed after the death of their child from leukemia, 15 pairs of the parents reported turning to each other for support (Binger et al., 1969). It was suggested that the mutual support was related to the previous state of the marriage. Mutual partner support is said to aid communication, and provides structure and meaning to the relationship interactions (Gilbert, in press).

Communication Breakdown

Repeatedly, communication breakdown is mentioned as a major problem in the marriages of those experiencing perinatal loss. Peppers & Knapp (1980) feel that communications is of major importance, but few have the skills that are necessary for a positive outcome at this time. Social blunders often have harmful effects. Sexual needs are also mentioned as a more intimate form of communication. During periods of grieving, sexual needs may not be met, which can lower this intimate form of communication and add to feelings of isolation. Callahan et al. (1983) feel that differential grieving patterns, in the presence of weak communication skills, often cause misunderstandings which can undermine the marriage.

The Impact of Pregnancy and Children on Couple Adjustment

A vast body of literature reports a negative correlation between the presence of children and marital satisfaction (Cowan & Cowan, 1988; LeMasters, 1957; White & Booth, 1985). Cowan & Cowan's (1988) study clarifies two aspects of parenting: negative aspects are more salient than positive in the early period after the birth of a child, and the transition to parenthood for men, women, and their relationship is disequilibrating. Glenn & McLanahan (1982) found that the negative effects of a child or children on marital happiness outweighed the positive mean effects across sex, race, religion, and employment status. However, when couples reported a high level of marital adjustment prior to pregnancy, they were less likely to experience a crisis at the birth of a child (Russell, 1974). In the case where conception occurred prior to marriage, both men and women perceived the conception as a crisis. However, Waite & Lillard (1991) found that children conceived before marriage had no effect on marital stability, but if the birth occurred prior to the marriage, marital problems ensued. Marriages with only premarital births increase the chance of marital dissolution in the first few years of marriages (Russell, 1974; Morgan & Rindfuss, 1985; Waite & Lillard, 1991). Cherlin (1977) found no effect on marriages for premarital birth. One of the few studies that failed to find any effect on marriage due to children was reported by Martini (1980).

The marital dyad is altered due to the birth of the first child. The needs of a new baby interfere with marital companionship and spontaneity due to time demands

(Schvaneveldt, 1971; Ryder, 1973; Rosenblatt, 1974). One group of studies indicates that marital satisfaction decreases after the birth of a child, and then increases when children begin to leave home (Campbell, Converse& Rodgers, 1976; Glenn, 1975; Glenn & McLanahan, 1982; Houseknecht, 1979; and Lerner & Graham, 1978). Other studies question these findings, and suggest that the quality of the relationship is the factor that is responsible for the satisfaction level. Higher levels of satisfaction are present in couples who are attentive to each others needs and those who adapt to changes in their relationship over time (Harriman, 1986; Power & Parke, 1984; and White & Booth, 1985).

In a sample of voluntarily, childless, married women and mothers, Houseknecht (1979) reported no correlation between length of marriage and marital adjustment. Childless couples report slightly higher marital satisfaction (Renne, 1970; Feldman, 1971; Ryder, 1973) and significantly more commitment to the continuation of the marriage (Houseknecht, 1979). No relationship was found between the spacing of children and marital happiness (Figley, 1973; Miller, 1975, 1976), and marital duration was not affected by the age at marriage or the degree of formal education (Maneker & Rankin, 1985).

The birth of the first child diminishes the occurrence of divorce in all marital cohorts and in marriages of differing lengths (Morgan & Rindfuss, 1988). These findings are from the June 1980 Current Population Survey. Children of preschool age in the home are also associated with lower incidence of marital dissolution. Rankin and Maneker (1985), using 1977 demographic data from a divorcing

population of California residents, found that 11,559 divorces took place. Of these, 5,770 divorces were couples with no children. Fifty percent of these divorces were for marriages that lasted under 5 years, and 50% of these were marriages of 5 years or longer. The buffering effect of children can be seen in the 5,789 divorces that took place for couples with one or more children. Only 12.2% of these couples were in marriages of less than 5 years, and for marriages that were 5 years or longer, 87.8% divorced. However, in this study, the presence of children younger than 2 did not deter couples from divorcing.

The incidence of divorce changes over the course of married life. The early buffering effects of children is counteracted as children grow. Waite and Lillard (1991), using data from a Panel Study of Income Dynamics that spanned 18 years, studied a sample of 4,400 first marriages and found that couples with children under 5 in the home were significantly less likely to divorce. The presence of children 6 to 12 showed a smaller nonsignificant effect on marital stability, and when children 13 or older were present, there was a significantly higher chance of divorce or separation.

There are conflicting reports on the length of marriage in relation to divorce. Heaton (1990), using data from the June 1985 Current Population Survey, found that new marriages have a low risk of divorce. Dissolution rates increase and remain higher for marriages in their 3rd to 7th year and then decrease. From a period of 1968 to 1985, couples that married before 1968 had a divorce rate of 26% during this 18 year period, as compared to those who married during the panel study (after 1968) had

a divorce rate of 35%, suggesting that high divorce rates occur early in marriage (Waite & Lillard, 1991).

The presence of children may deter unhappily married couples from divorcing, and this may affect the reports of marital satisfaction. Cherlin (1977) found that the presence of preschool children in the home was a deterrent to marital dissolution, and Glenn & McLanahan (1982) also feel that couples with children may approach the decision to divorce more slowly. Few studies report actual divorce statistics for couples who have had a child because many of the studies include only intact couples (Belsky, et at (1985); Cowan & Cowan (1988); Hoffman & Manis (1978). These studies are also of limited time duration, Belsky et. al (1985) interviewed couples in the last trimester of pregnancy, and 3 and 9 months postpartum. Cowan & Cowan's (1988) study lasted 2 years and the last interview was 18 months postpartum. Hoffman & Manis (1978) used a national sample but with only one interview, and couples reported that children brought them closer. However, factors that moved the couples apart were less time to spend together and disagreements on child rearing ideas.

White & Booth (1985) used a phone survey of a national sample in 1980 and 1983 of 113 childless couples and 107 couples who made the transition to parenthood to assess marital quality. A comparison of the samples suggested that parenthood did not affect marital quality. Over the 3 year period, marital satisfaction declined for both groups, and a major issue of dissent in marriages was the division of labor. Cowan & Cowan (1988) also report the division of labor as a reported problem in

marriages. However, differences were found in divorce rates 10% of the childless couples divorced by 1983 and only 1% of the new parents. This suggests that young children may provide a reason for continuation of marriages.

Although this body of literature shows decline in marital satisfaction in the presence of children, there is not a consensus on the actual factors that affect marital satisfaction.

Sex Roles

Male and female sex role differences are as apparent in parenthood as they are in experiencing a loss crisis. Women are more affected by the transition to parenthood than men (Hobbs & Wimbish, 1977), and the negative impact of a child on marriage is especially felt by mothers (Rollins & Galligan, 1978). These findings suggests that the greater burden of parenthood is sustained by women. Kach and McGhee (1982) found that mothers reported the most difficult time to be the last trimester of pregnancy to 3 months postpartum. Belsky, Lang, & Rovine (1985) also found the decline in marital quality to be higher for wives than their husbands in this same time period. However, unfavorable changes were also reported by fathers over the 1 year study. In Belsky's (1985) study, men report declines in romance, but they viewed their relationship with their partners as better, and women reported more overall dissatisfaction.

Planned Versus Unplanned Pregnancy

Unplanned pregnancies are reported to cause more crisis in a marriage than planned (Rollins & Galligan, 1978). In a study of black parents, Hobbs & Wimbish

(1977) found that whether a pregnancy was planned or unplanned affected the father's adjustment to the first child. Christensen (1968) suggests that it is not the number of children that causes either harmony or disharmony, but the number of children relative to the desired number.

Factors Affecting Pregnancy Outcomes

In light of the literature review above, it becomes clear that a simple relationship does not exist between pregnancy or pregnancy loss and marital satisfaction. It is complex due to the fact that many variables are operating. There are discrepancies in the literature on the studies of bereaved parents as to which factors affect marital satisfaction. Peppers and Knapp's (1980) model of husband and wife conflict seems to suggest that incongruent bonding, which would be more apt to occur in an earlier loss than a later loss, might cause marital conflict. Other studies suggest that later loss causes more grief, which would affect marital satisfaction negatively. The literature suggests that both pregnancy and loss are distressing times on a marriage, but there is little empirical evidence as to the occurrence of separation and divorce, in particular in the case of pregnancy loss.

Due to the gaps and discrepancies in the literature on the effects of pregnancy or pregnancy loss on marital satisfaction and those factors affecting it, this study is exploratory in nature. Marital satisfaction scores will be examined in all time periods both between groups and within groups. Although both pregnancy and loss are reportedly difficult times, it is expected that a loss would cause more marital distress.

Hypotheses

1. Since loss is expected to be more disequilibrating than pregnancy, marital satisfaction is expected to be lower for the loss group than the pregnant group.
2. Marital satisfaction is expected to be lower in the first time period for both groups than in subsequent rounds since both pregnancy and loss are reportedly difficult times.
3. Subsequent experience such as pregnancy, birth, or no change are expected to affect marital satisfaction positively, and subsequent loss should provide a negative effect, in Round 2 for the loss sample.
4. Other factors that are expected to affect marital satisfaction negatively are higher grief, higher mental distress, lower social support, unplanned pregnancy, no children in the home, younger age, and longer length of relationship.
5. Since women report greater distress during pregnancy and loss than their partners, gender differences are expected on marital satisfaction, modified SCL-90 scores, and for the loss group only, grief and greater distress for later gestational age at loss.
6. The rate of marital disruption is expected to be higher for the loss sample than the pregnant sample.

Research Design and Methodology

Data presented in this study are derived from the Perinatal Loss Project at Lehigh University carried out between 1984 and 1989. The study used a quasi-experimental approach known as the retrospective pretest, and was longitudinal in

nature. The pregnant comparison was chosen because they were as similar to the loss group as possible without experiencing the loss event. This design allows for a surrogate pretest and a check for retrospective data. Although some limitations are present in this design due to retrospection, it allows for a reliable comparison between groups at the first and third interviews, and within the groups. For the loss group, this includes three current time points, plus two retrospective ones. For the pregnancy group, this includes two current time points plus one retrospection. For a complete description of the use of this design in this study see Toedter, Lasker & Campbell (1990), and for a diagram see Figure 2.

Insert Figure 2 about here

Sample and Procedure

At Time 1, the sample included both a pregnancy loss group of women (N=138), and their partners (N=56), and a control group of pregnant women (N=215) and their partners (N=102). Both groups were obtained from the Lehigh Valley, Pennsylvania area from seventeen private OB/GYN practices, 4 hospital OB/GYN clinics, a birth center directed by midwives, and a city health bureau. Those in the loss group were asked by a nurse or physician in their practice or clinic to participate in the study at their post-partum visit, approximately 4 to 6 weeks after the loss. Pregnant subjects were selected from the same practices to proportionately represent the same trimester as those in the loss group.

The loss group consisted of 18 women experiencing neonatal death, 39 who had fetal deaths, 18 who had ectopic pregnancies, and 63 who experienced spontaneous abortion. Of those asked to participate in the study, 84.6% accepted. From all of those asked to participate, information on length of gestation, age, occupation, marital status, type of loss, and loss history was gathered. No significant difference on demographic data was found between those who agreed to participate and those who refused. The original number of participants at Time 1 for the loss group was 138 women and 56 of their spouses or partners. The second interview for the loss group took place approximately 14-18 months post loss with 77% of the original sample included, 112 women and 38 of their partners. The final contact with the loss group took place approximately 25-29 months after the loss. Time 3 interview included 71% of the sample, 101 women and 37 of their partners.

The pregnant group consisted of 215 women and 102 of their partners, and were interviewed during pregnancy. No data were collected from this group at the second time period after the birth. The final time point, approximately 25 to 30 months after the birth, included 109 women and 62 of their partners. In the pregnancy group, only those who were within the comparable time, 25-30 months post due date during the time that the follow-up interviews were being conducted were contacted.

Both groups were demographically similar and represented a diversity of classes. According to Hollingshead categories, across the five classes, this study is slightly skewed to the upper class, 24%, 19%, 20.4%, 17%, and 19% for the loss sample. However, all classes are well represented. The Duncan Occupational Index

for the loss group showed a diversity of occupational scores which ranged from 0 to 93, with a mean of 29.3 and a standard deviation of 29.2. The pregnancy group was comparable to the loss group on socioeconomic indicators. The female participants were primarily Caucasian and living with a husband or partner. The mean age for the loss group was 28.5 with a range of 15 to 41. The mean age of the pregnancy group was 26.84 with a range of 15 to 42. Only a small number of minorities reside in the Lehigh Valley area, and the study correspondingly included 1% Black and 5% Hispanic subjects.

The women who agreed to participate were interviewed in their homes by trained female interviewers. A nominal fee of $5.00 was paid for participation. The interview format was semi-structured with open-ended, closed-ended, and structured scale items. The first interview for the loss group lasted approximately 3.5 hours, while successive interviews lasted approximately 1.5 hours. The first interview for the pregnancy group was approximately 2 hours. Additional questions were asked of the loss group. At the first interview, women were asked if their husbands or partners were willing to participate. Both present and retrospective data were gathered. The pregnancy group was contacted during the pregnancy, and retrospective as well as present information was asked for both groups. The prepregnancy recollection for both groups is similar (Toedter et al., 1990).

The interview included a demographic section, a measure of mental health, a marital satisfaction inventory, and a social support measure. In addition, the interview assessed fertility history, counseling received, life conditions and events, religiosity,

and children's behavior for both groups. The loss group were asked questions about the circumstances surrounding the loss and hospital and ritual practices. They also completed the Perinatal Grief Scale. This study will not include all of these variables, but is particularly interested in the marital satisfaction measure and those factors that affect marital satisfaction.

Materials

Marital Satisfaction

The marital satisfaction instrument included items from the ENRICH scale and consisted of 43 questions. The ENRICH measure was developed by Olson & McCubbin (1983). The scale was completed by all subjects at all current time points, but not retrospectively. Cronbach's alpha for the total sample at the first interview on overall marital satisfaction was .91. Satisfaction was analyzed between the groups in all the rounds by examining the mean scores for groups. Higher scores indicate more satisfaction.

The scores on the marital satisfaction scale range from 85 to 173. This instrument was recoded into low satisfaction (85-114), medium satisfaction (115-144), and high satisfaction (145-173). Groups were compared on the ratings of low, medium, and high for all time periods.

A global marital satisfaction question was also examined and was asked both currently and retrospectively. The question asks for a description of each person's rating of his/her relationship on a 5 point scale that ranges from very happy to very unhappy. They were examined from the retrospective time point (during pregnancy),

to the current time point (6 - 8 weeks post loss), from Round 1 to 2, and 2 to 3 for the loss group. The pregnancy sample was compared on this question from Round 1 to Round 3. Further, to ascertain the validity of the retrospection, the loss group's rating of their marriage during the pregnancy was compared to the pregnancy group's current (during pregnancy) ratings. Ratings were expected to be similar if retrospection was not clouded by the loss nor length of time. A comparison of the ratings of happiness was also examined between groups.

Respondents in the loss group were asked how the loss affected their marriage, if their partners blame them for the loss, and if they worry about each other. These data were analyzed to provide a clearer understanding of the effects of the loss on marital satisfaction.

For those not in the same relationship as when they became pregnant, data are compared between Round 1 and 2, and 2 and 3 for the loss group, and from Round 1 and 3 for the pregnancy group. If separated, the respondents were asked if the separation was in any way connected to the pregnancy or the loss. This is pertinent to this study in particular because the literature suggests that marriages fail due to a pregnancy loss, but empirical data of this type are not available, and information on both groups is available from this study.

Modified SCL-90

The modified version of SCL-90 (Derogatis, Rickels, & Rock, 1981) was used to assess the emotional distress experienced by the individuals in the study. Of the 9 behavioral indicators, only the depression subscale was examined. The global index of

overall mental health was also examined. The modified version of the SCL-90 was administered to all subjects at all time points and retrospectively. Evidence for concurrent, construct, and discriminant validity is provided in the manual (Craig & Abeloff, 1974; Deragotis, Lipman, Covi, & Rickels, 1972; Derogatis et al., 1981; Derogatis & Melisaratos, 1983).

Perinatal Grief Scale

The instrument that was used to assess grief was the shortened version of the Perinatal Grief Scale (Potvin, Lasker, & Toedter, 1989). The instrument is reliable with a Cronbach's alpha of .90 and contained 33 Likert like items. Grief was examined in relation to marital satisfaction at all time points for the loss group.

Turner Social Support

Social support was measured using the Turner Provisions of Social Relationships scale. This scale was factor analyzed into two factors: the first reflects subject's perception of family support with a Cronbach's alpha of .765 for 5 statements, and the second includes statements regarding friend support with a Cronbach's alpha of .762 for 8 statements. The Turner social support scales were completed by all subjects and at all time points.

Additional Self Report Measures

Other self report measures that will be examined for both groups are: age, planned versus unplanned pregnancy, length of relationship, and presence or absence of children in the home. For the loss group subsequent pregnancy experience in Round 2 will be examined, and reports of how the loss affected relationships.

Results

Hypothesis 1: Since loss is expected to be more disequilibrating than pregnancy, marital satisfaction is expected to be lower for the loss group than the pregnant group.

Between Group Comparisons

On the overall marital satisfaction instrument, there are no significant differences between the pregnancy and loss group at either Round 1, $t(488)=1.21$, n.s., or Round 3, $t(286)=-.97$, n.s. Both groups report the same amount of satisfaction whether they were pregnant or had experienced a loss 6-8 weeks previously in Round 1, and by Round 3, scores decreased to lower satisfaction in both groups. Table 1 shows a breakdown of the means of the marital satisfaction instrument by group and loss type for each of the three rounds of the study.

Insert Table 1 about here

A single global question on marital happiness was analyzed retrospectively for the loss group and currently for the pregnancy group as a reliability check on the retrospection. There was no significant difference reported between the loss group (prior to the loss) on marital happiness compared to the group that were currently pregnant, $t(493)=-1.330$, n.s. Both groups reported happiness with their marriages.

When this global question was analyzed currently for the loss group (6-8 weeks post loss) and currently for the pregnancy group in Round 1, the pregnancy group reported that they were happier, $t(493)=-2.160$, $p<.05$, than the loss group. However,

by Round 3 this changed, and the loss group reported that they are significantly happier, $t(290)=1.970$, $p=.05$. This single question indicator of marital happiness is not consonant with the overall instrument which shows a lowering of marital satisfaction for both groups over the course of the study. Range restriction may be in part responsible for these findings. The global happiness question has a range from 1 to 5. Few people answered that they were neither happy nor unhappy, unhappy, or very unhappy: in Round 1, only 11 people in the pregnancy sample, and 16 in the loss sample, and in Round 3, 15 in the pregnancy sample and 6 in the loss sample.

In Round 1, the scores for both samples on the recoded marital satisfaction measurement are quite similar. In the pregnancy group, 3.7 % were in the low satisfaction category, as were 5.3% of the loss group. The medium category contained 50.2% of the pregnancy group and 53.4% of the loss group, and the high satisfaction category contained 46.2% of the pregnancy group and 41.3% of the loss group.

Only data for the loss sample exist in Round 2 of the study, and are reported here even though there is no comparison to the pregnancy group. In Round 2, 14-18 months post loss, there is a shift to the higher satisfaction conditions, only 2.7% remain in the low, the medium remains fairly constant from Round 1, only decreases by 1%, and contains 52.4% of the sample. The high satisfaction condition contains 44.9% of the sample.

By Round 3, the most salient change for both groups is a shift from the high satisfaction condition down to the medium satisfaction condition. The pregnancy sample contains only 23.4% of the sample in high, 72.7% in the medium, and 3.9% in

the low condition. The loss sample contains 26.9% in the high satisfaction condition, 70.9% in the medium satisfaction condition, and 2.2% in the low satisfaction condition. See Table 2 for percentage change over the Rounds of the study.

Insert Table 2 about here

Hypothesis 2: Marital satisfaction is expected to be lower in the first time period for both groups than in subsequent rounds since both pregnancy and loss are reportedly difficult times.

Within Group Comparisons

The most noticeable changes occur within groups rather than between groups. Significant differences on satisfaction for the loss group can be found between Round 1 and Round 2, $t(142)=-1.74$, $p<.05$ (1-tail), with marital satisfaction rising, and then showing a significant decline between Round 2 and 3, $t(119)=-5.04$, $p<.001$. The difference in marital satisfaction is also significant from Round 1, the highest reported marital satisfaction time, to Round 3 the lowest reported marital satisfaction time period, $t(130)=2.23$, $p<.05$. The pregnancy group also reports lower satisfaction by Round 3, and the differences between Rounds 1 and 3 are significant, $t(149)=5.55$, $p<.001$. Thus marital satisfaction declines for both groups by Round 3 of the study.

When the global happiness question was analyzed for the loss group, comparing retrospectively to currently (Round 1), Round 1 to Round 2, and Round 2 to Round 3, no differences are found; marital happiness appeared to remain stable.

However, this is not congruent with the results of the marital satisfaction instrument whose results suggest the later time periods are associated with less marital satisfaction than Round 1. The decrease in marital satisfaction is significant for the pregnancy sample from Round 1 to Round 3, $t(154)=-1.810$, $p<.05$ (1-tail).

Hypothesis 3: Subsequent experience such as pregnancy, birth, or no change are expected to affect marital satisfaction positively, and subsequent loss should provide a negative effect, in Round 2 for the loss sample.

Those who experienced a loss in Round 1 and were pregnant in Round 2 reported significantly more marital satisfaction $t(29)=-1.97$, $p=.058$, in Round 2. Although mean scores on marital satisfaction increased for those who experienced a subsequent birth, the differences from Round 1 to Round 2 are nonsignificant, $t(46)=-1.12$, n.s. Mean marital satisfaction scores also increased for those who experienced no change but not significantly, $t(50)=-.64$, n.s. For those that experienced a subsequent loss, marital satisfaction decreased but not significantly, $t(13)=.56$, n.s. Marital satisfaction increased by Round 2, 14-18 months after the loss for those who experienced a pregnancy, a subsequent birth, and no change, but decreased for those who experienced a subsequent loss.

From Round 2 to 3, those who experienced a live birth and those who were not pregnant showed significantly less satisfaction with their marriages, live birth $t(39)=6.00$, $p<.001$ and no pregnancy $t(61)=3.56$, $p=.001$. No significant changes were found for those who were currently pregnant or those who experienced a subsequent

loss in Round 3. See Table 3 for mean marital satisfaction scores and T-Tests for the loss group who experienced changes over the course of the study.

Insert Table 3 about here

Hypothesis 4: Other factors that are expected to affect marital satisfaction negatively are higher grief (loss sample only), higher mental distress, lower social support, unplanned pregnancy, no children in the home, younger age, and longer length of relationship.

Grief

When marital satisfaction was examined in relation to grief scores, significant negative correlations were found for all rounds of the study. Higher grief scores were related to lower marital satisfaction. See Table 4 for correlations between the grief and marital satisfaction scales.

Insert Table 4 about here

In Round 1, a One-Way Anova shows that there are significant differences among reported marital satisfaction categories (low, medium, and high) in relation to grief scores, $F(2,186)=25.42$, $p<.001$. Higher grief is associated with lower marital satisfaction. These significant differences exist in Round 2 $F(2,144)=12.93$, $p<.001$

and for Round 3 $F(2,131)=5.22$, $p<.01$. See Table 5 for a breakdown by round and gender of mean grief scores by marital satisfaction for the total loss sample.

Insert Table 5 about here

For a graph of mean grief scores by marital satisfaction (low, medium, high), see Figure 3.

Insert Figure 3 about here

When loss type was recoded into early loss, which included spontaneous abortion and ectopic pregnancy, and late loss, which included neonatal and fetal death, no significant differences were found in relation to marital satisfaction in any of the time periods. However, with this recode, significant differences exist between early and late loss on the grief scale at all three time periods, Round 1, $t(192)=4.82$, $p<.001$, Round 2, $t(145)=5.41$, $p<.001$, and Round 3, $t(134)=4.53$, $p<.001$. Later loss may allow for a longer period of affectionate bonding, therefore, eliciting higher grief.

Modified SCL-90 Instrument

The loss sample answered the SCL-90 retrospective to when they were pregnant, and when compared to the pregnancy sample during pregnancy, no differences were found between the samples at this time point, or when the loss group at 6-8 weeks post loss were compared to the currently pregnant sample. However, in

Round 3, the pregnancy sample reported higher distress than the loss sample, $t(297)=1.76$, $p=.079$. The loss sample at 6-8 weeks post loss had a mean SCL-90 score of 28.33 and the pregnancy sample had a mean of 28.83, and in Round 3, the loss mean was ($M=23.82$) and the pregnancy mean ($M=28.07$).

When marital satisfaction was analyzed in relation to the SCL-90 for both groups separately in Round 1, significant mean differences were found among the satisfaction groups. The lower the reported marital satisfaction, the higher the SCL-90 scores, indicating distress for the loss sample, $F(2,186)=23.39$, $p<.001$, and for the pregnancy sample, $F(2,298)=32.33$, $p<.001$. This was also true in both Round 2 and 3 for the loss sample, Round 2, $F(2,144)=15.28$, $p<.001$ and Round 3, $F(2,131)=9.02$, $p<.001$. In Round 3 for the pregnancy sample, the differences are also significant, $F(2,151)=9.26$, $p<.001$. See Table 6 for mean SCL-90 scores by marital satisfaction (low, medium, and high).

Insert Table 6 about here

When the loss sample is recoded into early and late loss in Round 1, a one-tailed t-test shows that the later loss group are significantly more distress as measured by the modified SCL-90, $t(192)=1.76$, $p=.04$, than the early loss group. The gestational age at loss affects reported well-being.

Social Support

Both the loss and the pregnancy sample did not differ on reported social support during pregnancy, $t(506)=-.16$, n.s., when measured on the Turner family and friend support scales. The social support measure was asked retrospective to when the loss sample were pregnant. When asked currently at 6-8 weeks post loss, the loss group reported receiving significantly more support than the pregnant sample, $t(509)=-5.48$, $p<.001$.

Within group differences existed in reported marital satisfaction (low, medium, high) in relation to social support for both samples. For the pregnancy group in Round 1, those who reported higher satisfaction also reported more social support. Those who reported low marital satisfaction had a mean social support of ($M=40.82$), medium ($M=44.20$), and high ($M=47.17$). A One-way Anova showed the groups to differ reliably, $F(2,298)=24.91$, $p<.001$. The low marital satisfaction for the loss group had a mean of ($M=44.6$), medium ($M=46.58$), and high ($M=50.05$) with the results of a One-way Anova yielding $F(2,186)=10.65$, $p<.001$. Higher marital satisfaction is associated with higher social support.

When social support is examined for both groups in the low marital satisfaction condition, no differences exist between the groups, $t(19)=-1.21$, n.s. However, within the medium and high satisfaction conditions, the loss group is receiving significantly more social support than the pregnancy group, medium, $t(250)=-3.63$, $p<.001$, and high, $t(215)=-5.11$, $p<.001$. The loss group that are reporting both medium and high satisfaction with their marriage are receiving significantly more social support from

both family and friends than those who are pregnant and report medium and high marital satisfaction.

Planned / unplanned pregnancy

Both samples were asked if the pregnancy was planned. The loss group had 120, or 63%, planned pregnancies and 69, or 37%, unplanned, and the pregnant group reported 166, or 55%, planned pregnancies and 135, or 45%, unplanned. Mean marital satisfaction scores for unplanned pregnancies in the pregnant group was 141.24 and the loss group was 136.48. Marital satisfaction was higher for those who planned a pregnancy, pregnant group planned (M=142.10), and loss group planned (M=142.28). No significant differences were found for the pregnancy group between planned and unplanned pregnancy on marital satisfaction, $t(299)=-.55$, n.s. Significant differences were found for the loss group between planned and unplanned on marital satisfaction, $t(187)=-2.74$, $p=.007$. No significant differences were found between the loss and pregnancy sample for planned pregnancy in relation to marital satisfaction scores. Significant differences were found between the samples for an unplanned pregnancy, the loss group reported lower marital satisfaction, $t(202)=2.19$, $p<.05$. Thus those who lose a pregnancy that was unplanned report lower marital satisfaction.

Presence / Absence of Children in the Home

In both Rounds 1 and 3, no difference was found on marital satisfaction in relation the presence or absence of children in the home for either sample. However, reported grief was affected by children for the loss group. Those who had a living

child in Round 1 reported lower mean grief scores (M=74.09) than those who had no children (M=83.03), and these differences are significant, t(192)=2.64, p=.009. This is true for Round 3 also , one-tailed t-test found that those with a child or children had a mean grief score of 63.93 and those with no children had a mean grief score of 72.62, t(134)=1.65, p=.051.

Age

In a One-way Anova, marital satisfaction (low, med, high) was examined in relation to the age of the respondents for both groups. Those in the low marital satisfaction group had a mean age of 25.91, medium (M=27.15) and high (M=28.37). Differences exist on reported marital satisfaction and age F(2,487)=4.05, p=.0181. The older the respondents, the higher the reported marital satisfaction.

Length of Time in Relationship

The loss sample were in relationships for a greater length of time than the pregnancy sample, loss (M=87.73, in months) and pregnancy (M=71.01, in months). When length of relationship is examined by reported marital satisfaction for both groups, a One-way Anova found that the longer the length of time in a relationship the higher the reported marital satisfaction, F(2,487)=4.77, p=.0088. Those who reported low marital satisfaction were in relationships for approximately 4.47 years, those who reported medium satisfaction were in relationships for approximately 6.16 years, and those who reported high satisfaction were in relationships for approximately 7 years. These findings may show that people who are in relationships longer have made a commitment to marriage, and over time have worked out some of the differences that

those in marriages of shorter duration have not the opportunity to do. See Table 7 for mean length of time in relationship by marital satisfaction (low, med, high) for both groups.

Insert Table 7 about here

Hypothesis 5: Since women report greater distress during pregnancy and loss than their partners, gender differences are expected on marital satisfaction, modified SCL-90 scores, and for the loss group only, grief and greater distress for later gestational age at loss.

Marital Satisfaction

In Rounds 1 and 3, no gender differences were found on the overall marital satisfaction instrument for the pregnancy sample. For the loss group in Round 2, women reported significantly higher marital satisfaction than their partners, $t(145)=2.10$, $p<.05$. These results were not in the expected direction. When examining the mean marital satisfaction scores from Table 1, women appear to report slightly more satisfaction than their partners.

When gender differences are examined within the categories of low, medium, or high satisfaction, for the loss sample in Round 1, no differences were found in the low and medium marital satisfaction conditions. However, males and females who reported high satisfaction differed significantly, although both were in the same satisfaction condition, females ($M=153.35$), males ($M=150.24$), $t(76)=2.12$, $p<.05$. The

females reported significantly more satisfaction with their marriages than the males. For the pregnancy sample in Round 1, 9 females (M=105.4) and 2 males (M=111.00) were in the low satisfaction condition, and both males had equal scores, therefore no variance existed and this category could not be analyzed. The same phenomena that occurred in the loss group occurred for the pregnancy sample, no gender differences existed in the medium satisfaction condition, but significant differences existed in the high satisfaction condition, $t(137)=2.48$, $p<.05$, with women reporting higher marital satisfaction than their partners.

In Round 3, the low satisfaction condition was not analyzed for either sample due to the low number of people, 4 in the loss sample and 6 in the pregnancy sample. The pregnancy sample shows no gender differences in the medium satisfaction condition, but just as in Round 2 in the high satisfaction condition, $t(34)=1.89$, $p=.067$, with females reporting more satisfaction than their partners. For the loss sample, the significant gender difference in Round 3 is in the medium satisfaction condition, $t(93)=1.99$, $p<.05$, with females reporting higher satisfaction.

SCL-90

No gender differences existed on the modified SCL-90 in Round 1 for the loss group, although females had higher distress scores (M=30.17) than males (M=23.80), $t(192)=1.45$, n.s., nor in Round 3, females (M=24.62) and males (M=21.51), $t(134)=.78$, n.s. For the pregnancy sample, women reported significantly higher distress than their partners in Round 1, females (M=32.85) and males (M=20.40),

$t(315)=4.56$, $p<.001$, and in Round 3, a one-tailed test shows that women still report more distress than their partners, $t(161)=1.64$, $p=.05$.

Grief

Gender differences exist in relation to grief in Round 1. Females report significantly higher grief than their partners, $t(192)=3.75$, $p<.001$. The mean grief score for females is 82.09 and for males, 68.41. In subsequent rounds of the study, the gender differences in grief disappear. However, gender differences exist between grief scores and marital satisfaction. In Round 1, of those who reported low marital satisfaction, females had a mean grief score of ($M=119.91$), and males ($M=93.33$). The difference on grief scores between males and females is significant, $t(8)=2.60$, $p<.05$, in the same marital satisfaction condition. This gender difference in mean grief scores is also significant for those who reported medium satisfaction with their marriage, females ($M=87.37$) and males ($M=73.68$), $t(99)=2.93$ $p<.01$. Of the respondents who reported high marital satisfaction, females had higher grief scores than males, females ($M=71.18$) and males ($M=56.86$), and differed significantly in grief, $t(76)=2.94$, $p<.01$. In all marital satisfaction conditions, females report higher grief than males.

Gestational Age

Support is also found for gender differences in grief between males and females. Females reported higher grief than their partners regardless if the loss was early (abortion, ectopic) or late (neonatal, fetal). T-tests show significant differences

between males and female for early loss in Round 1 $t(109)=2.87$, $p < .01$, and in Round 3 $t(81)=3.15$, $p < .01$.

Hypothesis 6: The rate of marital disruption is expected to be higher for the loss sample than the pregnant sample.

Change in Relationships Over the Course of the Study

In subsequent rounds of the study, 20 people in the pregnancy group and 24 in the loss group reported a change in their relationship, most were marriages or remarriages. Four (3 females, 1 male), 3.67%, reported either separation or divorce in the pregnancy group, and out of the 4, we only had data from one partner (i.e., both partners did not participate in the study). In the loss group, 11 people (8 females, 3 males), 7.84%, reported either separation or divorce. Since 6 of these people were in 3 couples in which both partners participated, if we wanted to compare the number to the pregnancy group with single reportings, we would say 8 relationships experiences, separation or divorced. Thus in 3.67% of the pregnancy sample, relationships ended compared to 7.84% of the loss sample over the course of 2 1/2 years. Of these 8 relationships that ended, 3 losses were miscarriage, 2 ectopic pregnancies, 2 stillbirths, and 1 neonatal death. Five are early losses and four are late losses. Six of these couples were married and 2 report themselves as couples. In four cases other children were present in the home.

As mentioned above, 3 females said that their partner blamed them for the loss and 2 of them are in this separation/divorce group. The mean age for those in this group is lower than the sample mean, females (M =25.5) and males (M=24.7) in the

loss group. The mean marital satisfaction scores for Round 1 in this separation / divorce group are also lower than the sample mean, loss divorce / separation subsample (M=125.91) and total loss sample (M=140.163). This group of people also scored higher on the grief scale (M=90.64), than the loss sample as a whole (M=78.15). They also reported higher mental distress as measured by the modified SCL-90 (M=38.91) than the loss sample (M=28.33). Perhaps lower marital satisfaction in Round 1 suggests a weaker relationship, and with the stress of the loss, younger age, higher grief, and higher mental distress, all in combination, may help to undermine the couple's relationship.

Only one person in the loss group (divorce / separation) said that the loss affected the relationship negatively, and one other reported closer at first, but the loss became a factor by the 3rd Round. Four of these pregnancies were unplanned, and 4 planned. Four of these couples had one or more children and 4 reported no children in their home.

In the pregnancy sample, the four who separated/divorced reported a mean marital satisfaction score of 132.25 and the mean of the whole pregnancy sample was 141.71, lower scores in Round 1 may be indicative of a weaker relationship. Their (divorced / separated) SCL-90 scores (M=30.75) were similar to the pregnancy group as a whole, (M=29.32). The mean age of these four people is 23.75. Only 1 person in this group reports an unplanned pregnancy and 3 planned. All 4 couples were married, and children were present in the home.

Other Questions Examined for the Loss Group

When the loss group were asked if their partner blamed them for the loss, few people in the loss group blamed their partner for the loss. In Round 1, only 3 females and 1 male said that their partner blamed them for the loss. This is only 2% of the loss group, and by Round 3, no one reports that their partner blames them.

When the loss group was asked if they worry about their partners, many partners reported concern for each other after the loss. In Round 1, 21% of the females, and 58% of the males were worried about their partner. By Round 2, worry decreases, and only 7% of the females and 8% of the males reported being worried about their partner. However, by Round 3, there was an increase in the percentage of partners worried about each other from Round 2 reporting. Eighteen percent of the females and 28% of the males were worried about their partner.

In all 3 Rounds, the respondents were asked how the loss affected their relationship. The open ended responses were categorized as positive, neutral, or negative replies. Chi Squares show that in all 3 time periods the respondents reported reliably more positive answers. Time 1, $X^2(2, N=150)=67.96$, $p<.001$, Time 2, $X^2(2, N=145)=50.49$, $p<.001$, and Time 3, $X^2(2, N=132)=60.55$, $p<.001$. The positive responses were statements such as, the loss made us closer, or the relationship is stronger. An example of a neutral response is no change in the relationship, and negative responses were it is hard to get along, and we argue more. Although up to three responses were coded, the data presented here are for the first response. See Table 8 for percentage of answers in each category.

Insert Table 8 about here

Discussion

Hypothesis 1: Since loss is expected to be more disequilibrating than pregnancy, marital satisfaction is expected to be lower for the loss group than the pregnant group.

Between Group Comparisons

The hypothesis that there would be differences in marital satisfaction between the loss and the pregnancy samples was not supported by findings from the marital satisfaction scale at any time period. Similarly, the single global question on marital happiness showed that both groups reported the same amount of marital happiness during pregnancy. However, when the pregnant group is compared during pregnancy to the loss group 6-8 weeks post loss, the pregnant group reported that they were significantly happier. This does supports the first hypothesis that would suggest that the loss group would be less happy at this time, although this difference is not reflected in the responses to questions about specific aspects of the relationship. Overall, both samples are quite similar in reported marital satisfaction.

Hypothesis 2: Marital satisfaction is expected to be lower in the first time period for both groups than in subsequent rounds since both pregnancy and loss are reportedly difficult times.

Within Group Comparisons

Support is found in part for the second hypothesis in the loss sample from Round 1 to Round 2. Marital satisfaction increases by Round 2, however, it then decreases by Round 3. The mean marital satisfaction scores are even lower than in Round 1. The study would be stronger had the pregnancy sample been interviewed in Round 2 and the groups could be compared to ascertain the facts affecting the change.

However, for the overall study, the second hypothesis is not supported, in fact, our findings suggest that marital satisfaction decreased significantly for both groups from Round 1 to 3. This finding is congruent with the marital satisfaction literature which suggests that marital satisfaction declines over the first 15 years of marriage (Blood & Wolfe, 1960; Bradburn & Caplovitz, 1965; Hicks & Platt, 1971; Lewis & Spanier, 1979; Spanier & Lewis, 1980). Heaton (1990) suggests that new marriages are not at risk for dissolution, but rates of dissolution rise and remain high from the 3rd to 7th year of marriage, which would also suggest a decline in marital satisfaction.

The single global indicator for the pregnancy sample is congruent with the literature in that marital satisfaction declines from Round 1 to 3. However, for the loss sample, reported satisfaction remained the same from Round 1 to 3. Therefore, neither findings support the hypothesis of lower satisfaction in Round 1.

Hypothesis 3: Subsequent experience such as pregnancy, birth, or no change are expected to affect marital satisfaction positively, and subsequent loss should provide a negative effect, in Round 2 for the loss sample.

Support is found for the third hypothesis. Marital satisfaction increased significantly for those who experienced a subsequent pregnancy. It also increased for those who experienced a live birth and for those who experienced no change , although the increases were not significant. A significant decrease was found for the portion of the sample who experienced a subsequent loss. Although mean marital satisfaction increased for the loss sample as a whole by Round 2, it would appear that a subsequent loss has disequilibrating effects on a marriage. A second loss 14-18 months following a previous loss may find this portion of the sample upset with many facets of their lives, including their marriages.

Hypothesis 4: Other factors that are expected to affect marital satisfaction negatively are higher grief (loss sample only), higher mental distress, lower social support, unplanned pregnancy, no children in the home, younger age, and longer length of relationship.

Grief

Grief correlates negatively with marital satisfaction. The fourth hypothesis is supported in relation to grief. In the 3 Rounds of the study, higher grief is associated with lower marital satisfaction. The stress experienced while grieving may leave couples more vulnerable to marital strain (Benswanger et. al., 1980), and tensions that existed before the loss may be exacerbated at this time.

SCL-90

Emotional distress as measured by the SCL-90 showed that higher amounts of emotional distress were significantly related to lower marital satisfaction for both

samples which lends support to the fourth hypothesis. When people are emotionally upset, whether from pregnancy loss or the changes that a new baby brings to a marriage, the marriage is affected negatively.

Social Support

Social support is yet another factor that affects marital satisfaction. Support is found for the social support part of the fourth hypothesis. Lower social support is significantly associated with lower marital satisfaction. The support that is offered by family and friends appears to have a buffering effect on marriage.

Planned / Unplanned Pregnancy

The findings are mixed on planned/unplanned pregnancy. For the pregnancy sample, whether the pregnancy was planned or unplanned did not affect reported marital satisfaction. However, for the loss group, those who experienced an unplanned pregnancy and lost the pregnancy reported significantly lower marital satisfaction than those who planned a pregnancy and lost the pregnancy. Perhaps an unplanned pregnancy is more stressful (Rollins & Galligan, 1978) and when it eventually results in loss, this may additionally burden the marriage. It may also suggest less harmony and communication in a marriage. The hypothesis is supported in part in that unplanned pregnancy in the loss sample is associated with lower marital satisfaction, but this is not the case in the pregnancy sample.

Presence / Absence of Children

Although the literature reports that couples with children report lower marital satisfaction, the presence of younger children in the home also provide a buffer against

marital dissolution. Therefore, it was hypothesized that couples with children would report more commitment to a marriage and report higher marital satisfaction. Support was not found for this part of the hypothesis; the presence or absence of children in the home did not affect reported marital satisfaction in this study. However, for the loss sample, the presence of children in the home was associated with less grief and higher marital satisfaction.

Age and Length of Time in Relationship

Both age and length of time in a relationship affect reported marital satisfaction. Consequently, this section of the hypothesis was supported. The older the participant and the greater length of time in the relationship both associate with higher marital satisfaction.

These findings may in part be to the maturation process. These findings may also show that people who are in relationships longer have made a commitment to marriage, and over time have worked out some of their differences. Marriages of shorter duration may not have had sufficient time to do this.

Strong support was found for hypothesis four for all the factors, except planned / unplanned which showed mixed findings dependent upon the sample and the presence or absence of children, which did not affect reported marital satisfaction in any direction. A pattern begins to emerge as to what factors affect marital satisfaction negatively. They are higher grief, higher mental distress, lower social support, younger age, and shorter length of time in a relationship.

Hypothesis 5: Since women report greater distress during pregnancy and loss than their partners, gender differences are expected on marital satisfaction, modified SCL-90 scores, and for the loss group only, grief and greater distress for later gestational age at loss.

Marital Satisfaction

It was expected that women would report lower marital satisfaction than their partners due to the stress of pregnancy and loss; however, support was not found for gender differences in marital satisfaction. Only in Round 2 were there gender differences in marital satisfaction, and it was not in the predicted direction. Women in the loss sample reported significantly more satisfaction than their partners. However, marital satisfaction increased for the overall loss sample from Round 1 to 2.

When the marital satisfaction instrument was recoded into low, medium, and high, gender differences were found within these categories. In every case where there was a gender difference, it was females who reported more marital satisfaction; therefore, lower marital satisfaction for women due to pregnancy and loss is not supported.

SCL-90

The findings on gender differences on reported mental distress are mixed dependent upon the sample. Although females in the loss sample had higher distress scores, they were not significantly higher than their partners. Support is found for this hypothesis in the pregnancy group. Females in Round 1 and 3 report significantly more distress than their partners. This is congruent with the belief that pregnancy is a

stressing time (Round 1) and that women bear the greater burden of children (Round 3), and both may be distressing events for females.

Grief

Support is found for gender differences in grief. In Round 1, 6-8 weeks post loss, women report significantly higher grief than their partners. However, this incongruent grieving dissipates over the subsequent rounds of the study. These results are congruent with a vast body of literature which suggest that gender differences in grieving styles are evident (Benfield et al., 1976; Benfield et al., 1978; Cook, 1983; Dyregrov & Matthiesen, 1987a; Goldbach et al., 1991; Helmrath & Steinitz, 1978; Littlefield & Rushton, 1986; Peppers & Knapp, 1980; Rollins, 1988; Schiff, 1977; Stinson et al., in press; Videka-Sherman & Lieberman, 1985). It is difficult to say what impact this has on marital satisfaction, but higher grief is associated with lower marital satisfaction. Females and males do differ on reported grief, but this may be due to the fact that females are able to vocalize their grief.

Gestational age

Support was found for differences in grief between males in relation to gestational age. Females had higher grief than their partners regardless whether the loss was categorized as early or late in Round 1. Females and males seem to express their grief differently. This also lends support to the body of literature which suggests that incongruent grieving exists between males and females experiencing a pregnancy loss.

Hypothesis 6: The rate of marital disruption is expected to be higher for the loss sample than the pregnancy sample.

Change in Relationships Over the Course of the Study

The loss sample experienced a divorce/separation rate of 7.84% by the last round of the study as compared to 3.6% of the pregnancy sample, which supports the sixth hypothesis. There were some differences in those who separated or divorced as compared to the entire samples. In the loss group, those who separated or divorced had lower marital satisfaction scores than the mean of the loss sample, so they started low on marital satisfaction. They scored higher on grief and mental distress symptoms than the loss sample. In the loss sample, those who separated were younger than the mean age of the sample.

Two of the 3 females who said that their partner blamed them for the loss were in this group, but not the one male. Surprisingly only one person reported that the loss affected the relationship negatively, and by Round 2, another person reported that they were closer at first and then the loss became a factor. Marriages might have already been in danger of dissolution, similar to those couples that Klass (1988) found who divorced after the death of their child. Of those who separated or divorced in the loss group, 4 of the pregnancies were planned and 4 were unplanned as compared to the entire sample of which 63% were planned and 37% were unplanned. It is difficult to say what role unplanned pregnancy plays, but those with unplanned pregnancies reported less marital satisfaction than those who experienced a planned pregnancy in

the loss sample. An unplanned pregnancy may be just one more stressor that affects a couple's relationship.

For the pregnancy sample, those that separated or divorced also had a lower mean age and lower marital satisfaction scores than the entire pregnancy sample. However, their SCL-90 scores were in a similar range as the rest of the pregnancy sample. Of the 4 people that divorced or separated, 3 were planned pregnancies and only 1 unplanned.

A profile begins to emerge from the information above of those at risk for greater couple distress in a loss situation. The first factor is lower marital satisfaction to begin with, along with younger age, higher grief and higher mental distress. Since those that experience an unplanned pregnancy also report lower marital satisfaction in both samples, this may also play a role in further stressing a relationship.

Caution should be exercised when generalizing these divorce / separation rates for the two samples. Since there was no Round 2 for the pregnant sample and other couples may have separated or divorced, they could not be reached in Round 3. The study had no way to gain this information. One of the couples reported in the loss separation / divorce group only responded to Round 1 information; when contacted for Round 2, they declined due to marital problems leading to separation. Those who experienced a loss may have remained in the study because of the loss, and the study may not have seemed as important to those who did not experience a loss.

Partner Support for the Loss Group

Those in loss dyads seem to be more supportive of their partners than nonsupportive. Only 2% of the loss group reported that their partner blamed them for the loss, and over time, this partner blaming disappeared by Round 3. There appeared to be more concern and worry by the partners for each other than negative aspects. Fifty-eight percent of the males reportedly worried about their partners after the loss, and 21% of the females were worried about their partners in Round 1.

When asked how the loss affected their relationship, the loss group reported significantly more positive effects on their relationship than negative. In all Rounds of the study, negative responses were the least reported. Significantly more of the respondents felt that the loss had brought them closer or made the relationship stronger. Reported strengthening of relationship and partners worrying about each other may be a reflection of partner support, which appears to be higher in this study than reported in the literature

References

Alexander, D. A. (1988). Bereavement and the management of grief. *Journal of Psychiatry, 153*, 860-864.

Arnold, J. H., & Gemma, P. B. (1983). *A child dies: a portrait of family grief.* Rockville, MD: Aspen Publishers Inc.

Belsky, J. (1985). Exploring individual differences in marital changes across the transition to parenthood: The role of violated expectations. *Journal of Marriage and the Family, 47*, 1037-1044.

Belsky, J., Lang, M. E., & Rovine, M. (1985). Stability and change in marriage across the transition to parenthood: A second study. *Journal of marriage and the Family, 47*, 855-865.

Benfield, D. G., Leib, S. A., & Reuter, J. (1976). Grief response of parents after referral of the critically ill newborn to a regional center. *New England Journal of Medicine, 294(18)*, 975-978.

Benfield, D. G., Leib, S. A., & Vollman, J. H. (1978). Grief response of parents to neonatal death. *Pediatrics, 62*, 171-177.

Benswanger, E. G., Baider, L., Cornely, P. J., & Sonis, M. (1980). Infant death in rural community: Implications for research and intervention. *Journal of Rural Community Psychology, 1(1)*, 25-46.

Binger, C. M., Ablin, A. R., Feuerstein, R. C., Kushner, J. H., Zoger, S., & Mikkelsen, M. S. (1969). Childhood Leukemia: Emotional impact on patient and family. *New England Journal of Medicine, 208(8)*, 414-418.

Birtchnell, J. (1970). Early parent death and mental illness. *British Journal of Psychiatry, 116,* 281-288.

Blood, R. O., & Wolfe, E. M. (1960). *Husbands and wives: The dynamics of married living.* Glencoe, IL: Free Press.

Borg, S., & Lasker, J. (1989). *When pregnancy fails: Families coping with miscarriage, ectopic pregnancy, stillbirth, and infant death (Rev. ed.).* NY: Bantam.

Bowlby, J. (1980). *Attachment and loss (Vol. III).* NY: Basic Books, Inc.

Bradburn, N., & Caplovitz, D. (1965). *Reports on happiness.*Chicago: Aldine.

Bugen, L. A. (1977). Human grief: A model for prediction and intervention. *American Journal of Orthopsychiatry, 47(2),* 196-206.

Callahan, E. J., Brasted, W. S., & Granados, J. L. (1983). *Fetal loss and sudden infant death: Grieving and Adjustment for families.* In E. J. Callahan & K. A. McCluskey (Eds.)., Life-span developmental psychology: Nonnormative life events (pp. 145-166). NY: Academic Press, Inc..

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life.* NY: Russell Sage Foundation.

Cherlin, A. (1977). The effects of children on marital dissolution. *Demography, 14,* 264-272.

Christensen, H. T. (1968). Children in the family: Relationship of number and spacing to marital success. *Journal of Marriage and the Family, 30,* 283-289.

Cook, J. A. (1983). A death in the family: Parental bereavement in the first year. *Suicide and Life-threatening Behavior, 10*, 42-61.

Cook, J. A. (1988). Dad's double binds: Rethinking fathers' bereavement from a men's study perspective. *Journal of Contemporary Ethnography, 17(3)*, 285-308.

Cowan, P. A., & Cowan, C. P. (1988). *Changes in marriage during the transition to parenthood: Must we blame the baby?*. In G. Y. Michaels & W. A. Goldberg (Eds.)., The transition to parenthood current theory and research (pp. 114-154). NY: Cambridge University Press.

Craig, T. J., & Abeloff, M. (1974). Psychiatric symptomatology among hospitalized cancer patients. *American Journal of Psychiatry, 131*, 1323-1327.

Cullberg, J. (1971). Mental reactions of women to perinatal death. In N. Morris (Ed.), *Proceedings of the Third International Congress of Psychosomatic Medicine in Obstetrics and Gynecology*. (pp. 326-329). Basel: Karger

Davidson, G. W. (1984). *Stillbirth, neonatal death and sudden infant death syndrome*. In H. Wass & C. A. Corr (Eds.)., Childhood and death (pp. 243-260). NY: Hemisphere Publishing Corporation.

Davis, D. M. (1975). Sudden infant death syndrome: An opportunity for primary prevention. *American Journal of Psychiatry, 32*, 684-.

Derogatis, L. R., Lipman, R. S., Covi, L., & Rickels, K. (1972). Factorial invariances in symptom dimensions in anxious and depressive neuroses. *Archives General Psychiatry, 27*, 659-665.

Derogatis, L. R., & Melisaratos, N. (1983). The brief symptom inventory: An introductory report. *Psychological Medicine, 13*, 595-605.

Derogatis, L. R., Rickels, K., & Rock, A. F. (1981). The SCL-90 and the MMPI: A step in the validation of a new self-report scale. *British Journal of Psychiatry, 138*, 185-193.

Dyregrov, A., & Matthiesen, S. B. (1987a). Similarities and differences in mothers' and fathers' grief following the death of an infant. *Scandinavian Journal of Psychology, 28 (1)*, 1-15.

Dyregrov, A., Matthiesen, S. B. (1987b). Stillbirth, neonatal death and sudden infant death (SIDS): Parental reactions. *Scandinavian Journal of Psychology, 28(2)*, 104-114.

Feldman, H. (1971). *The effects of children on the family.* In A. Michel (Ed.), Family issues of employed women in Europe and America (pp. 107-125). Lieden, The Netherlands, E. F. Brill.

Figley, C. R. (1973). Child density and marital relationship. *Journal of Marriage and the Family, 35*, 272-282.

Gilbert, K. (in press). *Couple bereavement.*

Glenn, N. D. (1975). Psychological well-being in the post-parental stage: Some evidence for national surveys. *Journal of Marriage and the Family, 37*, 105-110.

Glenn, N. D., & McLanahan, S. (1982). Children and marital happiness: A further specification of the relationship. *Journal of Marriage and the Family, 44,* 63-72.

Glick, I. O., Weiss, R. S., & Parkes, C. M. (1974). *The first year of bereavement.* New York: Wiley.

Goldbach, K. R., Dunn, D. S., Toedter, L. J., & Lasker, J. N. (1991). The effects of gestational age and gender on grief after pregnancy los. *American J Orthopsychiatric, 61(3),* 461-467.

Harriman, L. C. (1986). Marital adjustment as related to personal and marital changes accompanying parenthood. *Journal of Applied Family and Child Studies, 35,* 233-239.

Heaton, T. B. (1990). Marital stability throughout the child-rearing years. *Demography, 27(1),* 55-63.

Helmrath, T. A., & Steinitz, E. M. (1978). Death of an infant: Parental grieving and the failure of social support. *The Journal of Family Practice, 6(4),* 785-790.

Hicks, M., & Platt, M. (1971). Marital happiness and stability: A review of research in the sixties. *Journal of Marriage and the Family, 32,* 553-573.

Hobbs, D. F., & Wimbish, J. M. (1977). Transition to parenthood by Black couples. *Journal of Marriage and the Family, 39(4),* 677-689.

Hoffman, L. W., & Manis, J. D. (1978). *Influences of children on marital satisfaction and dissatisfaction.* In R. M. Lerner & G. B. Spanier (Eds.)., Child influences on marital and family interaction (pp. 165-213). NY, Academic Press.

Houseknecht, S. (1979). Childlessness and marital adjustment. *Journal of Marriage and the Family, 41*, 259-265.

Kach, J. A., & McGhee, P. E. (1982). Adjustment to early parenthood: The role of accuracy of pre-parenthood expectations. *Journal of Family Issues, 3(3)*, 375-388.

Kaplan, D. M., Grobstein, R., & Smith, A. (1976). Severe illness in families. *Health and Social Work, 1(3)*, 72-82.

Kirkley-Best, E. (1981). *Grief in response to prenatal loss: An argument for the earliest maternal attachment.* Unpublished doctoral dissertation, University of Florida.

Klass, D. (1988). *Parental Grief: Solace and resolution.* NY: Springer Publishing Co.

Klaus, M. H., & Kennell, J. H. (1976). *Human maternal and paternal behavior.* In M. H. Klaus & J. H. Kennell (Eds.)., Maternal-Infant bonding (pp. 38-98). Saint Louis, MO: The C. V. Mosby Co..

Laurell-Borulf, Y. (1982). *Long-term adjustment after an emotional crisis: A follow-up of women with a perinatally dead infant. (English abstract).* Krislosning Langtidsperspekin.

LeMasters, E. E. (1957). Parenthood as crisis. *Marriage and Family Living, 19*, 352-355.

Learner, R. & Graham, S. (1978). *Child influences on marital and family interaction.* NY: Academic Press.

Lehman, D. R., Lang, E. L., Wortman, C. B., & Sorenson, S. B. (1989). Long-term effects of sudden bereavement: Marital and parent-child relationships and children's reactions. *Journal of Family Psychology, 2(3)*, 344-367.

Lewis, R. A., & Spanier, G. B. (1979). Theorizing about the quality and stability of marriage. In W. R. Burr, R. Hill, F. I. Nye, & I. L. Reiss (Eds.), *Contemporary theories about the family* (Vol. 1, 269-294). NY: Free Press.

Littlefield, C. H., & Rushton, J. P. (1986). When a child dies: The sociobiology of bereavement. *Journal of Personality and Social Psychology, 54*, 797-802.

Mandell, F., McAnulty, E., & Reese, R. M. (1980). Observations of parental response to sudden unanticipated infant death. *Pediatrics, 65(2)*, 221-225.

Maneker, J. S., & Rankin, R. P. (1985). Education, age at marriage, and marital duration: Is there a relationship?. *Journal of Marriage and the Family, ?*, 675-683.

Martini, M. M. (1980). Effects of the number and spacing of children on marital and parental satisfaction. *Demography, 17, Aug.*, 225-242.

Miles, M. S. (1984). *Helping adults mourn the death of a child.* In H. Wass & C. A. Corr (Eds.)., Childhood and death (pp. 219-242). NY: Hemisphere Publishing Corporation.

Miles, M. S. (1985). Emotional symptoms and physical health in bereaved parents. *Nursing Research, 34(2)*, 76-81.

Miller, B. C. (1975). Child density, marital satisfaction, and conventionalization, a research note. *Journal of Marriage and the Family, 37*, 245-347.

Miller, B. C. (1976). A multivariate developmental model of marital satisfaction. *Journal of Marriage and the Family, 38*, 643-657.

Morgan, S. P., & Rindfuss, R. R. (1985). Marital disruption: Structural and temporal dimensions. *American Journal of Sociology, 90(5)*, 1055-1077.

Murray, J., & Callan, V. J. (1988). Predicting adjustment to perinatal death. *British Journal of Medical Psychology, 61*, 237-244.

Olson, D. H., & McCubbin, H. I. (1983). *Families: What makes them work.* Beverly Hills: Sage.

Parkes, C. M. (1965). Bereavement and mental illness. *British Journal Medical Psychology, 38*, 1-26.

Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 19*, 2-21.

Peppers, L. G., & Knapp, R. J. (1980). *Motherhood and mourning: Perinatal death.* NY: Praeger Publishers.

Peppers, L., & Knapp, R. (1988). *How to go on living after the death of a baby.* Atlanta, GA: Peachtree.

Potvin, L, Lasker, J. & Toedter L. (1989). Measuring grief: A short version of the perinatal grief scale. *Journal of Psychopathology and Behavioral Assessment*, 2(1), 29-45.

Power, T. G. & Parke, R. D. (1984). Social network factors and the transition to parenthood. *Sex Roles, 10*, 949-972.

Rando, T. A. (1985). Bereaved parents: Particular difficulties, unique factors, and treatment issues. *Social Work, Jan/Feb*, 19-23.

Rankin, R. P., & Maneker J. S. (1985). The duration of marriage in a divorcing population: The impact of children. *Journal of Marriage and the Family, 47*, 43-52.

Renne, K. S. (1970). Correlates of dissatisfaction in marriage. *Journal of Marriage and the Family, 32*, 54-66.

Rollins, J. (1988). *Longitudinal grief responses of husbands and wives following the death of a child.* Society for the Study of Social Problems, Atlanta, GA.

Rollins, B. C., & Galligan, R. (1978). *The developing child and marital satisfaction of parents.* In R. M. Lerner & G. B. Spanier (Eds.)., Child influences on marital and family interactions (pp. 71-105). NY, Academic Press.

Rosenblatt, P. C. (1974). Behavior in public places: Comparison of couples accompanied and unaccompanied by children. *Journal of Marriage and the Family, 36*, 750-755.

Russell, C. S. (1974). Transition to parenthood: Problems and gratifications. *Journal of Marriage and Family, 36*, 294-302.

Ryder, R. G. (1973). Longitudinal data relating marriage satisfaction and having a child. *Journal of Marriage and the Family, 35*, 604-606.

Sanders, C. M. (1979-1980). A comparison of adult bereavement in the death of a spouse, child, and parent. *Omega, 10(4)*, 303-322.

Schiff, H. S. (1977). *The bereaved parent.* New York: Crown.

Schvaneveldt, J. D. (1971). Children: Modern foes or friends?. *Family Perspective, 5,* 27-35.

Skelskie, B. E. (1975). An exploratory study of grief in old age. *Smith College Studies in Social Work, 45,* 159-182.

Smith, A. C., & Borgers, S. B. (1988-1989). Parental grief response to perinatal death. *Omega, 19(3),* 203-214.

Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family, 38,* 15-28.

Spanier, G. & Lewis, R. (1980). Marital quality: A review of the seventies. *Journal of Marriage and the Family, 42,* 825-839.

Stinson, K. M., Lasker, J. D., Lohmann, J., & Toedter, L. J. (in press). Parents' grief following pregnancy loss: A comparison of mothers and fathers.

Tadmor, C. S. (1986). A crisis intervention model for a population of mothers who encounter neonatal death. *Journal of Primary Prevention, 7(1),* 17-26.

Toedter, L. J., Lasker, J. N., & Alhadeff, J. M. (1988). The perinatal grief scale: Development and initial validation. *American Journal of Orthopsychiatry, 58(3),* 435-449.

Toedter, L. J., Lasker, J. N., & Campbell, D. T. (1990). The comparison group problem in bereavement studies and the retrospective pretest. *Evaluation Review, 14(1),* 75-90.

Ventura, S. J., Taffel, S., & Mosher, W. D. (1988). Estimates of pregnancies and pregnancy rates for the United States 1976-85. *American Journal of Public Health, 78*, 506-511.

Videka-Sherman, L., & Lieberman, M. (1985). The effects of self-help and psychotherapy intervention on child loss: The limits of recovery. *American Journal of Orthopsychiatry, 55*, 70-82.

Waite, L. J., & Lillard, L. A. (1991). Children and marital disruption. *American Journal of Sociology, 96(4)*, 930-953.

White, L. K., & Booth, A. (1985). The transition to parenthood and marital quality. *Journal of Family Issues, 6(4)*, 435-449.

Wolff, J. R., Nielson, P. E., & Schiller, P. (1970). The emotional reaction to a stillbirth. *American Journal of Obstetrics and Gynecology, 108(1)*, 73-77.

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1988 - 1989	Psychology tutor, Beaver college

Professional Presentation:

Rosenbaum, V., Goodwin, J., Thomas, P., D'ver, A., & Carr, W. J. Kin Recognition in Domestic Dogs (*canis familiaris*), Paper submitted to Animal Behavior Society, State University of New York at Binghamton, June 1990.

Professional Affiliations:

American Psychological Association, Member

Table 1

Marital Satisfaction for All Samples and Sub-samples

		Round 1		Round 2		Round 3	
Group	**Sex**	**Mean**	**Std Dev**	**Mean**	**Std Dev**	**Mean**	**Std Dev**
Pregnancy	Total	141.71	13.66			136.42	11.55
	Female	142.21	14.41			136.31	12.72
	Male	140.72	12.06			136.62	9.19
Total Loss	Total	140.16	14.26	141.76	13.30	137.89	10.91
	Female	140.86	14.46	143.04	13.77	138.65	10.43
	Male	138.45	13.74	137.68	10.88	135.86	12.00
Abortion	Total	140.54	14.30	142.37	13.71	138.26	9.80
	Female	140.64	15.12	143.12	14.64	138.30	9.46
	Male	140.26	12.16	139.57	9.43	138.08	11.48
Ectopic	Total	141.12	12.93	144.40	10.31	138.00	9.69
	Female	142.11	13.99	145.67	9.24	140.45	6.96
	Male	138.57	10.18	140.60	13.50	132.60	13.33
Fetal	Total	138.96	14.86	140.56	13.84	135.38	11.91
	Female	140.81	12.66	142.56	13.97	137.07	11.36
	Male	134.69	18.79	135.23	12.46	131.17	12.70
Neonatal	Total	140.44	14.72	139.41	13.79	141.11	12.29
	Female	140.44	17.05	140.85	14.98	142.25	13.97
	Male	140.44	9.32	134.75	8.85	138.83	8.61

Table 2

Percentages of Recoded Marital Satisfaction and Percentage Change over Rounds

Marital Satisfaction	Round 1 (%)	Round 2 (%)	Round 3 (%)	Change Round 1-2 (%)	Change Round 2-3 (%)	Change Round 1-3 (%)
Pregnancy						
Low	3.70		3.90			5.41
Medium	50.20		72.70			44.82
High	46.20		23.40			-49.35
Loss						
Low	5.30	2.70	2.20	-49.06	-18.52	-58.49
Medium	53.40	52.40	70.90	-1.87	35.31	32.77
High	41.30	44.90	26.90	8.72	-40.09	-34.87

Table 3

T-Tests Comparing Marital Satisfaction Scores on Subsequent Pregnancy Experience from Round 1 to Round 2 and Round 2 to Round 3

Round	Recoded Loss Group	Round	N	Mean Marital Satisfaction	Std Dev Marital Satisfaction	T-Value	p <
2	Currently Pregnant	1	30	138.43	15.71	-1.97	0.05
		2	30	142.87	14.24		
	Live Birth	1	47	140.53	13.99	-1.12	n.s.
		2	47	142.23	14.44		
	Subsequent Loss	1	14	143.07	11.31	0.56	n.s.
		2	14	141.36	10.75		
	Not Pregnant	1	51	139.88	15.56	-0.64	n.s.
		2	51	141.11	12.19		
3	Currently Pregnant	2	10	134.40	24.00	-0.30	n.s.
		3	10	136.30	11.15		
	Live Birth	2	40	143.15	11.41	6.00	.001**
		3	40	134.47	11.55		
	Subsequent Loss	2	7	140.71	12.01	0.10	n.s.
		3	7	140.29	14.68		
	Not Pregnant	2	62	143.42	11.94	3.56	.001**
		3	62	139.45	9.44		

[1] One-tail

Table 4

Correlation Between Grief Scale and Marital Satisfaction for all Time Periods

Round	Sex	Correlation	Probability
1	Total	-0.50	<.001
	Female	-0.55	<.001
	Male	-0.53	<.001
2	Total	-0.44	<.001
	Female	-0.44	<.001
	Male	-0.53	<.001
3	Total	-0.44	<.001
	Female	-0.43	<.001
	Male	-0.51	<.001

Table 5

Mean Grief Scores by Marital Satisfaction

		Marital Satisfaction					
		Low		Medium		High	
Round	Sex	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
1	Total	111.94	18.95	83.17	22.49	67.32	19.88
	Female	119.91	14.40	87.37	21.32	71.18	20.46
	Male	93.33	15.89	73.68	22.50	56.86	14.42
2	Total	101.00	14.88	72.81	17.99	61.35	19.61
	Female	101.00	14.88	72.43	17.32	62.89	19.47
	Male	0.00	0.00	73.63	19.75	53.64	19.36
3	Total	82.33	5.51	66.61	16.35	57.47	20.23
	Female	82.50	7.78	66.35	16.42	59.26	22.18
	Male	82.00	0.00	67.34	16.49	52.11	12.21

Table 6

Marital Satisfaction on Mean SCL-90 Scores for All Three Rounds

Group	Round	Marital Satisfaction	N	Mean SCL-90	Std Dev SCL-90
Loss	1	Low	10	79.20	30.43
		Medium	101	30.81	27.76
		High	78	18.05	17.83
	2	Low	4	62.75	22.01
		Medium	77	29.86	19.95
		High	66	18.47	15.77
	3	Low	3	54.33	46.92
		Medium	95	24.65	16.55
		High	36	15.44	15.13
Pregnancy	1	Low	11	60.00	24.20
		Medium	151	34.96	25.29
		High	139	19.21	15.42
	3	Low	6	43.50	22.71
		Medium	112	30.17	20.20
		High	36	16.06	16.52

Table 7

Mean Length of Time in Relationship by Marital Satisfaction

Marital Satisfaction	Pregnancy		Loss	
	Mean	N	Mean	N
Low	64.09	11	42.01	10
Medium	66.39	151	85.21	101
High	76.06	139	97.85	78

Table 8

Percentages of Responses to

"How has the loss affected your relationship?"

	Round 1		Round 2		Round 3	
Rating	**%**	**N**	**%**	**N**	**%**	**N**
Positive	64.70	97	59.31	86	65.15	86
Neutral	22.00	33	28.97	42	19.70	26
Negative	13.30	20	11.72	17	15.15	20
Totals	100.00	150	100.00	145	100.00	132

Figure 1

A Model of Husband-Wife Conflict

Peppers & Knapp (1980)

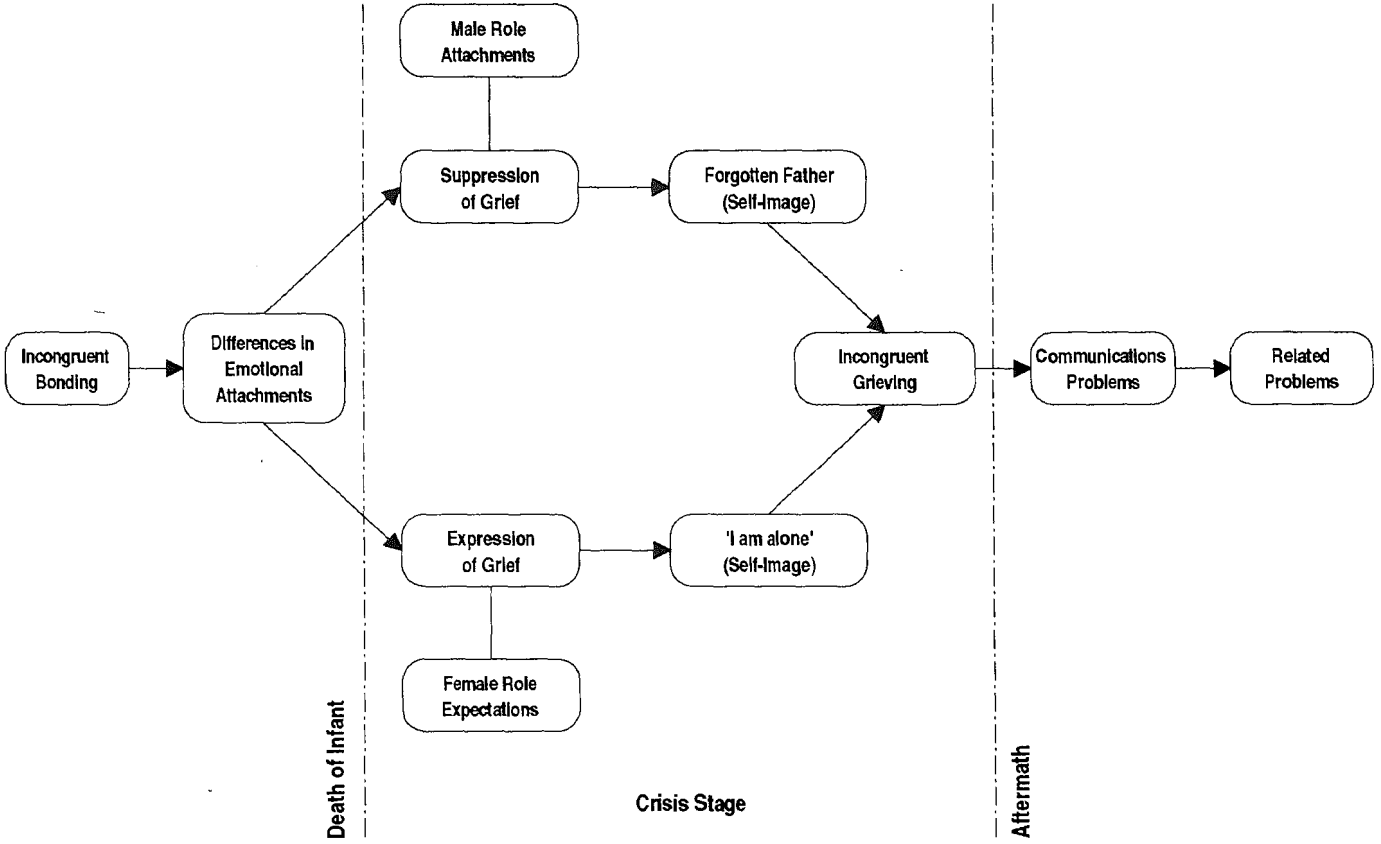


Figure 2

Design of Perinatal Loss Project Longitudinal Study

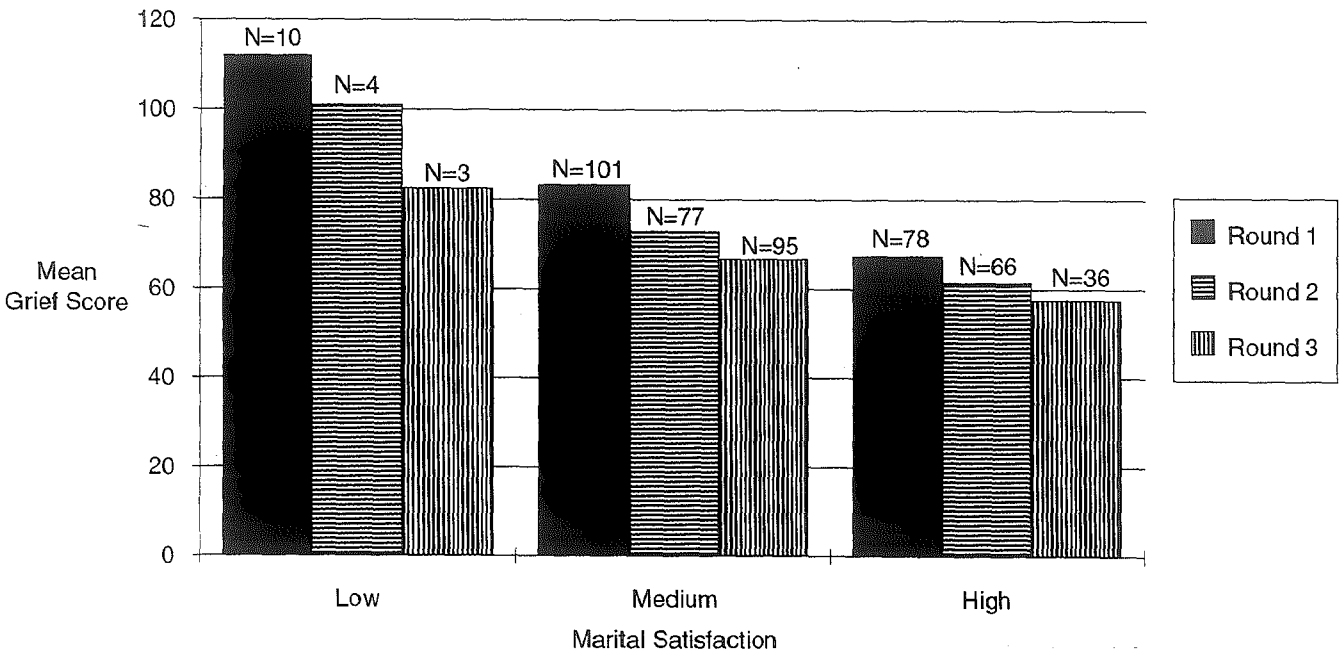
(Toedter, Lasker, & Campbell, 1990)

		Pre-pregnancy	During Pregnancy		6 Weeks Postloss	1 Year Follow-Up	2 Year Follow-Up
	Time	**(0)**	**(1)**		**(2)**	**(3)**	**(4)**
Group							
Loss		R	R	X	C	C	C
Pregnant Comparison		R	C				

R = Retrospective Data
C = Current Data
X = Loss Event

Figure 3

Mean Grief Score vs Marital Satisfaction
for Total Loss Group



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